

REMARKS

Claims 1-6, 9, 14-17, 19-23 and 25-26 are pending in this application. Claims 1 and 14 are amended herein. Claims 7-8, 13 and 18 were previously canceled and claims 10-12 and 24 are canceled herein. Claim 26 has been added. No new matter has been added. Applicant respectfully requests reconsideration of the claims in view of the following remarks.

Claims 10-13 and 24 have been canceled as being directed to an unelected invention. A divisional application may be filed at a later date to prosecute these claims.

Applicant thanks the Examiner for the helpful telephone interview, which was conducted on February 5, 2008. Examiner Tran, the undersigned and Blayne Peacock, Applicant's representative in Singapore, attended the telephone interview. The amendments provided herein were discussed during this call. Pending additional search and verification, the Examiner indicated that these amendments should lead to allowance.

Claims 1-4, 9, 14 and 20-25 have been rejected under 35 U.S.C. 102(e) as being anticipated by Vaiyapuri (U.S. Patent Application Publication No. 2002/0027271). Other dependent claims have been rejected as being obvious over Vaiyapuri in view of other art. Applicant respectfully traverses these rejections.

Claim 1, as previously presented, recites a "heat conducting plate having at least one second portion extending laterally out from the central region between the integrated circuit and the substrate." As discussed with the Examiner, Applicant believes that a fair reading of Vaiyapuri does not teach or suggest this limitation.

The Office Action relies on Figure 2 of Vaiyapuri, which shows die attach site 116 being a continuous piece with lead fingers 108. From the specification, it is clear that bond pads 126 (not labeled in Figure 2, see Figure 1a-1f or Figure 4) on the integrated circuits 102 are

electrically coupled to circuit traces 192 on the substrate 190 via bond wires 160, lead fingers 142 and primary lead fingers 108. Pars. [0029], [0032] and [0037]. While Figure 2 shows the die attach site 116 coupled to the lead fingers 108, Applicant respectfully submits that the figure is in error.

Vaiyapuri teaches, with respect to Figure 1h, a trim and form operation that forms die assemblies 180. Par. [0036]. The trim operation is accomplished by shearing segments of the dice house dam bar 128 and of first and second dam bars 148 and 158 lying between superimposed lead fingers 108, 142 and 152 from the base lead frame 110 and first and second offset lead frames 140 and 150, respectively. *Id.*, see also Fig. 4, Par. [0038]. "As shown in Fig. 2, the dual LOC semiconductor 180 of the present invention *may then* be mounted to circuit traces 192 of a carrier substrate 190. Par. [0037] (emphasis added). At no point is the die attach site 116 ever reconnected with the lead fingers 108. To do so would cause the IO contacts to be short-circuited.

During the Examiner interview, Applicant agreed to amend claim 1 to clearly state that the IO contacts would not be connected together through the central portion of the heat plate. As such, claim 1 has been amended to recite that "the heat conductive pad [is] electrically isolated from the IO pads of the integrated circuit." Figure 2 of Vaiyapuri, even if accurate, clearly does not teach this limitation since the die pads 126 are electrically connected to the lead fingers 108 via bond wires 160 and lead fingers 142. As a result, it is respectfully submitted that claim 1 is allowable over the references of record.

Claims 2-6, 9 and 23 depend from claim 1 and add further limitations. It is respectfully submitted that these claims are allowable over the references of record in view of their dependence on an allowable claim as well as the additional limitations.

Claim 14, as previously presented, specifically recites "a heat conductive plate mounted over the substrate, the heat conductive plate comprising a central portion and a plurality of arms extending outwardly from the central portion, one or more of the arms extending laterally outwardly from a side surface of the central portion of the plate." Claim 14 also recites "a plurality of wire bonds between an upper surface of the integrated circuit and the contact regions of the substrate, the wire bonds extending between adjacent ones of the arms of the heat conductive plate such that at least some of the bond wires are electrically isolated from the heat conductive plate." Applicant respectfully submits that Figure 2 of Vaiyapuri fails to show any bond wires that are electrically isolated from the heat conductive plate. As discussed above with respect to claim 1, Figure 2 clearly shows die pads 126 that are electrically connected to the lead fingers 108 via bond wires 160 and lead fingers 142. If the lead fingers 108 are treated as the arms then they do not meet the limitation of being electrically isolated from the bond wires.

Therefore, it is respectfully submitted that claim 14 is allowable over the references of record.

Claims 15-17, 19-20, 25 and 26 depend from claim 14 and add further limitations. It is respectfully submitted that these claims are allowable over the references of record in view of their dependence on an allowable claim as well as the additional limitations.

Claim 21, as previously presented, recites "a heat conductive plate having a first portion interposed between the integrated circuit and the substrate, the heat conductive plate being heat-conductively connected to, and electrically isolated from, the integrated circuit and having at least one second portion extending laterally out from between the integrated circuit and the substrate." As discussed above, Figure 2 of Vaiyapuri does not teach a heat conductive plate that is heat-conductively connected to and electrically isolated from an integrated circuit and has at

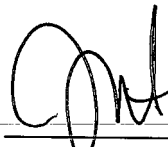
least one second portion extending laterally out from between the integrated circuit and the substrate. Therefore, it is respectfully submitted that claim 21 is allowable.

Claim 22 depends from claim 21 and adds further limitations. It is respectfully submitted that this claim is allowable over the references of record in view of their dependence on an allowable claim as well as the additional limitations.

The fact that Applicant may not have specifically traversed any particular assertion by the Office should not be construed as indicating Applicant's agreement therewith.

In view of the above, Applicant respectfully submits that the application is in condition for allowance and requests that the Examiner pass the case to issuance. If the Examiner should have any questions, Applicant requests that the Examiner please contact Applicant's attorney at the address below. In the event that the enclosed fees are insufficient, please charge any additional fees required to keep this application pending, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,



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2/25/08

Date

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